STATE OF CALIFORNIA THE RESOURCES AGENCY DEPARTMENT OF FISH AND GAME

Pursuant to Fish and Game Code Section §1501.5 (b), this grant process disburses funds for restoration projects approved by the Director of the Department of Fish and Game. This Grant Award is subject to the following conditions.

- This Grant is made to Montague Water Conservation District, hereinafter referred to as the "Grantee," by the Department of Fish and Game hereinafter referred to as the "Grantor."
- 2. The Grantee agrees to provide all labor, materials, tools, permits, and incidentals necessary to complete Shasta River Diversion Improvement and Fish Screen Installation, in accordance with Exhibit A, which is attached and made a part of this Grant by this reference.
- This Grant shall be effective from April 1, 2007 through March 31, 2009. The Grantee should be aware that time is of the essence and the Grantor expects work will be started during the first available field season, or as soon as practicable.
- This Grant shall not exceed \$120,850.00, including all taxes, licenses and fees in accordance with the budget detail outlined in Exhibit B, which is attached and made a part of this grant by this reference.

GRANTOR – State of California	GRANTEE -
Department of Fish and Game	Montague Water Conservation District
Renee Renwick Printed Name of Person Signing	Printed Name and Title of Person Signing
Authorized Signature	Authorized Signature
Assistant Deputy Director, Administration Title	PO Box 247; Montague, CA 96064 Address
Date	Date

- 5. The budget in Exhibit B is an estimate of the Grantee's project costs. If required by actual costs, the Grantor may approve and reimburse expenditures in any of the budgeted categories in excess of the estimated costs provided there are offsetting, decreased expenditures in any other budgeted categories. Such requests for budget category changes must be made in writing to the Grantor's Project Manager. Any cumulative budget category shifts in excess of 10% will require a formal amendment hereto.
- 6. The Grantor's Project Manager is:

Rick Davis; 1625 South Main Street Yreka, CA 96097 Phone: (530) 841-2550 Fax: (530) 841-2551

Fax: (530) 841-2551 Email: rdavis@dfg.ca.gov 7. The Grantee's Project Manager is:

Gary Black
P.O. Box 268
Etna, CA 96027
Phone: 530-467-3402
Fax: 530-467-3975
Email: gblack@sisqtel.net

8. Prevailing wages may be required to be paid on certain types of projects, typically public works projects. Existing law defines "public works," as, among other things, construction, alteration, demolition, installation, or repair work done under contract and paid for in whole or in part out of public funds.

California Fish and Game Code section 1501.5 exempts from the prevailing wage requirements, contracts with public agencies, nonprofit organizations, or Indian tribes that exceed \$50,000 in cost, excluding the cost of gravel. In addition, State Legislature passed Assembly Bill 2690, which amended Labor Code section 1720.4, to exclude most work performed by volunteers from the prevailing wage requirements.

Any questions of interpretation regarding the Labor Code should be directed to the Director of the Department of Industrial Relations, the State department having jurisdiction in these matters. You may also refer to the Department of Industrial Relations (DIR) website at http://www.dir.ca.gov.

- 9. No work can be performed until the Grantee has received:
 - a. An executed copy of this grant; and
 - b. A formal "Notice to Proceed" including written notification from the Grantor's Project Manager verifying that the project has been reviewed and approved pursuant to the California Environmental Quality Act for any applicable project.
- 10. This Grant does not constitute approval of the project or of any specific project features for purposes of compliance with any state or federal environmental law, including but not limited to the California Environmental Quality Act. Independent review and recommendation will be provided by the Grantor as appropriate on those projects where local, state, or federal permits or other environmental compliance is required.
- 11. It will be the responsibility of the Grantee to obtain all permits and make all arrangements necessary for its performance hereunder. Written permission must be obtained from landowner(s) for access to perform grant work.
- 12. No property will be purchased with funds provided by the Grantor under this grant without prior approval of the State. The Grantor does not have responsibility for loss or damage to rented equipment arising from causes beyond the control of the Grantor. The Grantor's responsibility for repairs and liability for damage or loss is restricted to that made necessary by or resulting from the negligent act or omission of the Grantor or its officers, employees, or agents.

For the purpose of this Grant, "equipment" shall be defined as tangible property (including furniture) with a unit cost of \$500.00 or more and a useful life of four (4) years or more. Actual cost includes the purchase price plus all costs to acquire, install and prepare the equipment for its intended use

The Grantee may purchase property under this Agreement only if specified in Exhibit "B" (Budget Detail and Payment Provisions). Any property purchased by the Grantee with funds provided under this Agreement shall be the property of the State during the customary depreciable life thereof. The Grantee shall promptly report any such purchase to the Project Manager and to the State's Property Officer. Should this Agreement be terminated for any reason, or upon expiration and failure to

negotiate hereof, all such property shall be returned to the State within the timeframe negotiated between the Grantee and the State.

Prior written authorization by the Project Manager shall be required before the Grantee will be reimbursed for any property purchase not specified in the Budget. The Grantee shall provide to the Project Manager all particulars regarding the necessity for such property and the reasonableness of the cost.

Before property purchases made by the Grantee are reimbursed by the State, the Grantee shall submit paid vendor receipts identifying the Agreement number, purchase price, description of the item, serial number, model number, and location, including the street address, where the property will be used during the term of this Agreement. Said paid receipts shall be attached to the Grantee's invoices.

The Grantee shall keep adequate and appropriate records of all property purchased with Agreement funds and at the time of purchase, prepare a Property Purchased with State Funds report and submit one (1) copy to the Project Manager and one (1) copy to the Property Officer. A copy must be retained by the Grantee.

The State reserves the right at any time to evaluate the cost of property and reimburse at an amount equal to costs reflected in, but not limited to, Agreements to the State Department of General Services, Procurement Division, as negotiated with vendors who supply the same type of property.

All property shall be tagged after acquisition by the Grantee in accordance with instructions provided. The purpose of tagging assets is to designate the assets as belonging to the State. Whatever property is lost, stolen, or destroyed, the Grantee shall immediately report the loss, theft, or destruction to the local law enforcement agency (or the California Highway Patrol {CHP} if the crime occurs on either state-owned or state leased property) and to the Project Manager. The Grantee will also prepare a Property Survey Report.

In the case of stolen property, the Grantee shall also complete a CHP Report of Crime on State Property (STD 99), obtain a copy of the law enforcement agency's report and submit these to the Project Manager. The Grantee shall adjust their property records and retain a copy of the Property Survey Report as documentation.

Losses of State property due to fraud or embezzlement shall be reported in the same manner as described above. The Grantee shall be charged with any loss and damages to State property due to the Grantee's negligence.

The Grantee shall, at the request of the State, submit an inventory of property furnished or purchased under the terms of this Agreement. Such inventory will be required not more frequently than annually.

Upon termination, expiration, or failure to negotiate renewal of this Agreement, all property purchased with Agreement funds shall promptly be returned to the State. The Grantee shall prepare an Inventory of State Furnished Property report and submit to the State and shall at that time query the Project Manager as to the State's requirements, including the manner and method in returning said property to the State. Final disposition of such property shall be at the State's expense in accordance with instructions from the Project Manager to be issued immediately after receipt of the final inventory.

13. The Grantor's Project Manager may require the Grantee to submit progress reports as often as deemed necessary, but not more often than once a month. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than December 31 and again each year until completed.

- 14. Grant disbursements will be made to the Grantee in arrears, upon receipt by the Grantor's Project Manager of an original Itemized invoice. In addition, a single copy of the invoice must be faxed or sent to the Grant Coordinator at: (530) 225-2921- Department of Fish and Game, Attn.: David E. Scott, 601 Locust Street, Redding CA 96001. Invoices may not be submitted more frequently than monthly, in arrears, with the exception of the invoice for final retention (See paragraph #17). The invoice shall contain the following information:
 - a. The word "Invoice" should appear in a prominent location at the top of the page(s);
 - b. Printed name of the Grantee;
 - c. Business address of the Grantee including P.O. Box, City, State, and Zip Code;
 - d. Name of the Region/Division of the Department of Fish and Game being billed;
 - e. The date of the invoice and the time period covered; i.e., the term "from" and "to";
 - f. The number of the Grant upon which the claim is based;
 - g. The invoice must be itemized using the categories and following the format of the budget in Exhibit B:
 - h. The total amount due. This should be in a prominent location in the lower right-hand portion of the last page and clearly distinguished from other figures or computations appearing on the invoice. The total amount due shall include all costs incurred by the Grantee under the terms of this grant;
 - The original signature of the Grantee (not required of established firms or entities using preprinted letterhead invoices); and
 - j. The Grantee must provide supporting documentation for the invoice and actual receipts upon request of the Grantor's Project Manager.
- 15. Grantee agrees that all travel and per diem paid its employees under this Grant shall be at rates not to exceed those amounts paid to the State's represented employees under collective bargaining agreements currently in effect.
- 16. Each invoice for payment must be accompanied by a written description, not to exceed two pages in length, of the Grantee's performance under this grant since the time the previous such report was prepared. The report shall describe the types of activities and specific accomplishments during the period for which the payment is being made rather than merely listing the number of hours worked during the reporting period. The final invoice must include a budget summary of cost share expenditures by fund source.
- 17. Grantor shall withhold 10% from each and every payment pending fulfillment of the Grantee's obligations herein. Upon completion of the Grantee's obligations, the Grantee must invoice for the payment retention.
- 18. Any disputes concerning the project or the Grant shall be resolved by the Project Managers of the Grantor and Grantee. In the event the dispute cannot be resolved by the Project Managers, the dispute shall be referred to the Director of the Department of Fish and Game, whose decision will be final.
- 19. The Grantee shall maintain complete and accurate records of its actual project costs and shall retain said records throughout the term of the Grant and for a period of three (3) years after receipt of final payment. During such time, said records shall be made available to the State of California, or their designated representative, for audit purposes during normal business hours. Expenditures not documented, and expenditures not allowed under the Grant or otherwise authorized by the Grantor shall be borne by the Grantee. The audit shall be confined to those matters connected with the Grant, including but not limited to, the administration and overhead costs.

- 20. All subcontracts will be made in a manner to provide, to the maximum extent practicable, open and free competition. In order to ensure objective subcontract performance and eliminate unfair competitive advantage, subcontractors that develop or draft work requirements, statements of work, or requests for proposals shall be excluded from competing for such subcontracts.
- 21. If a subcontractor is used, then a written copy of the sub agreement must be submitted to the Grantor's Project Manager, prior to the commencement of work by the subcontractor. The subcontract must include specific language which establishes the rights of the auditors of the State to examine the records of the subcontractor relative to the services and materials provided under the grant.
- 22. The Grantee and any subcontractors shall permit the Grantor to review and inspect project activities at all reasonable times during the performance period of this Grant, including review and inspection on a daily basis.
- The project specifications subject to this Grant may only be amended in writing by mutual agreement
 of the Grantor and Grantee.
- 24. The Grantor may terminate the Grant upon giving thirty (30) days written notice to the Grantee. In case of early termination, a final payment will be made to the Grantee upon receipt of an invoice covering costs incurred up to notice of termination, based on the portion of work completed.
- 25. Under Fish and Game Code section 1501.5 and Public Resources Code section 6217.1, DFG is authorized to collect information from grantees in order to process, track and ensure completion of grant projects. A Grantee's name and address may be provided to the public if requested. Other personal information submitted on this grant may be released to governmental entities involved with the funding of the project, for law enforcement purposes, pursuant to court order, or for official natural resources management purposes.
 - A Grantee may obtain a copy of his/her grant file maintained by the Grantor by submitting a written request to the Department of Fish and Game, Fisheries Restoration Grant Program, Native Anadromous Fish and Watershed Restoration Branch, 830 S Street, Sacramento, CA 95814. All requests must include the requestor's name, address, and telephone number.
- 26. To ensure payment and allow for an adequate amount of time to process the payment(s) and close the appropriation, all invoices for work performed and charged against this grant must be received and approved by the Grantor's Project Manager no later than **April 15, 2009**.
- 27. The Grantee shall comply with all applicable state laws, rules, regulations and local ordinances specifically including but not limited to environmental, procurement and safety laws, rules, regulations and ordinances. As may be necessary, the Grantee shall be responsible for obtaining the services of appropriately licensed professionals to comply with the applicable requirements of the Business and Professions Code including but not limited to section 6700 et seq. (Professional Engineers Act) and/or section 7800 et seq. (Geologists and Geophysicists Act).

If the Grantee fails to perform in accordance with the provisions of this Agreement, the Grantor retains the right, at its sole discretion, to delay, interrupt or suspend the work for which the grant monies are supplied.

EXHIBIT A Shasta River Diversion Improvement and Fish Screen Installation SCOPE OF WORK

Under direction of the Department of Fish and Game (DFG), and under the following conditions and terms, the Grantee will:

- Improve fish passage for Chinook and coho salmon, and steelhead trout at two sites on the Shasta River in Siskiyou County. The objective is to improve access to 4.5 miles of fish habitat, and increase spawning habitat for adult salmonids and rearing habitat for juvenile salmonids.
- The Grantee will conduct work on the Shasta River approximately 4.5 miles downstream from Lake Shastina. The project is located in Township 43 North, Range 5 West, Section 21 and 22; Latitude 41.56352 North and Longitude 122.42586 West, and Latitude 41.56242 North and Longitude 122.41483 West. As depicted in Exhibit C, Attachments, made part of this agreement by this reference.
- 3. Improve fish passage providing access to habitat for salmonids by completing the following work:
 - Site #1: Construct a boulder weir; armor 10 feet of stream bank above the weir and 10 feet of
 stream bank below the weir on the west bank and 20' of stream bank above and below the weir
 and around the head gate on the east bank; install 40 feet of 30 inch culvert off the east bank;
 re-profile 340 feet of ditch to acquire the appropriate grade for the fish screen, install a
 measuring weir; and install a diagonal sloping plate fish screen with a maximum capacity of 4.0
 cubic feet per second.
 - Site #2: Construct two boulder weirs to lift the elevation approximately one foot; armor the west stream bank 20 feet above and 20 feet below the weir and around the head gate; armor 20 feet of the east stream bank; install 220 feet of 30 inch culvert off the east bank; re-profile 220 feet of ditch to the appropriate grade; install a cone screen with a maximum capacity of 6.0 cubic feet per second; reconfigure and rebuild the pump station so the pump system is 3.5 feet deeper than currently; remove the existing flash board dam structure.
 - The Grantee, the land manager, DFG and NRCS will review and develop site specific, construction ready plans. The plans will include drawings of the weir placement as well as specifics for water diversion and fish relocation if necessary.
 - Implement plans for fish removal and water diversion.
 - The Grantee and land manager will select a contractor to implement the project and provide the appropriate materials. The Grantee project coordinator will be on site to ensure proper materials and implementation methods are used.
 - · Any disturbed soils will be seeded, mulched and planted with native plants.
 - The resulting self-cleaning fish screens will be maintained by the water user. The sloping plate screen will incorporate a fish bypass which will be designed, constructed, and operated to safely return fish directly to the stream. It is the responsibility of the water user to oversee the daily operation of the screen, routinely clean the screen, and install/remove the screen seasonally.
- 4. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.
- 5. The Grantee shall notify the Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

- Fish relocation and dewatering activities shall only occur between July 1 and October 15 of each year.
- The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
- All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
- The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
- Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the California Salmonid Stream Habitat Restoration Manual.
- 6. The Grantee will submit project designs for approval to the Grant Manager. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and DFG criteria for fish passage as described in the Third Edition, Volume II, Part IX, February 2003, of the California Salmonid Stream Habitat Restoration Manual. All fish screening projects will follow guidelines developed by DFG and NOAA Fisheries as described in Appendix S, June 2000 Version, Third Edition, California Salmonid Stream Habitat Restoration Manual, Flosi et al.
- 7. All habitat improvements will be in accordance with techniques described in the Third Edition, January 1998, of the California Salmonid Stream Habitat Restoration Manual.
- 8. Work in flowing streams is restricted to July 1 through October 15. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years.
- 9. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on 3.5 inch floppy disk(s) or CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than December 1 and again each year until completed. The report shall include, but not necessarily be limited to the following information:
 - Grant number
 - Project name
 - Geographic area (é.g., watershed name)
 - Location of work show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
 - Geospatial reference/location (lat/long is preferred defined as point, line, or polygon)
 - · Project start and end dates and the number of person hours expended
 - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
 - Expected benefits to anadromous salmonids from the project
 - Labeled before and after photographs of any restoration activities and techniques
 - Specific project access using public and private roads and trails, with landowner name and address
 - Complete as built project description
 - Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects-- Reporting Metrics (HB) (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- · Name the priority habitat limiting factors identified in that plan that are addressed by the project
- · Type of monitoring included in the project
 - o Design spec achieved
 - o Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Fish Passage Improvement Projects (HB):

- · Number of blockages removed or made passable.
- Number of miles made accessible to salmonids.

Fish Screen Projects (SC)

- Number of screens installed
- Average range of flow rate (cfs) of diversions treated
- Quantity of water protected by screens (acre feet)

Water Quality Projects:

- Water quality limitations addressed by the project (e.g. 303(d), TMDL)
- 10. The Grantee will acknowledge the participation of the Department of Fish and Game, Klamath River Restoration Grant Program on any signs, flyers, or other types of written communication or notice to advertise or explain the Shasta River Diversion Improvement and Fish Screen Installation.

EXHIBIT B Shasta River Diversion Improvement and Fish Screen Installation ESTIMATED BUDGET

The Grantee will provide up to \$168,180.00 in funds or in-kind services as cost share to complete tasks described in paragraphs one through ten of Exhibit A, Statement of Work, and in Table 1 below. The Grantor will provide an amount not to exceed \$120,850.00 as shown below in this Estimated Budget. Accurate records of in-kind funds or services, if applicable, will be provided to the Grantor with the final invoice.

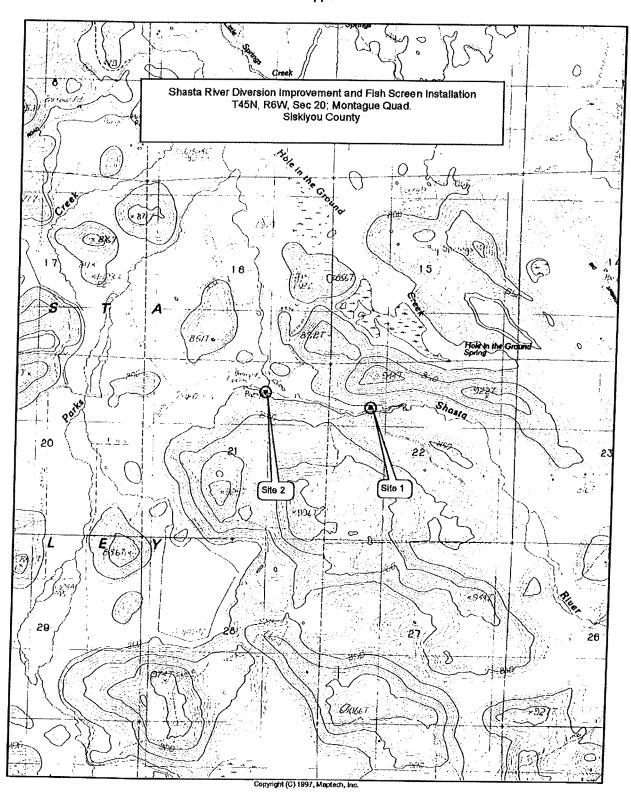
PERSONAL SERVICES Project Coordination Staff Benefits @ 34%	Hours 20	Rate \$32.00	\$640 <u>\$218</u>
Total Personal Services			\$857
OPERATING EXPENSES Subcontractors	<u>Units</u>	Cost per Unit	
Engineer			\$5,850
Project lead/Construction mngmt.			\$14,950
10 yard dump truck			\$3,500
Concrete sub-contractor			\$1,000
metal fabricator			\$10,400
Materials and supplies			
Delivered quarry rock	48.57 tons	\$35	\$1,700
4' Boulders	37.5 tons	\$120	\$4,500
Geotextile fabric	2 rolls	\$440	\$880
Head gate	1 each	\$2,300	\$2,300
Measuring weir			\$1,200
Delivered concrete	26 cu. yd.	\$120	\$3,120
Cone screen			\$30,000
Fabrication Materials			\$8,000
30 HDPE pipe	280/yds.	\$38	\$12,160
lumber/forming materials			\$4,000
*Travel	800/mlles	\$0.34	\$272
Loader	35 hrs.	\$95	\$3,325
Office rent			\$800
Office equipment rent			\$800
Postage/paper/ink			\$250
Total Operating Expenses			\$109,006
Subtotal			\$109,864
Administrative Overhead @ 10%			\$10,986
TOTAL ESTIMATED BUDGET			<u>\$120,850</u>

Table 1: Table of Funding Sources and Cost Share

SOURCE OF FUNDS	CASH	IN-KIND (If Applicable)	TOTAL
Klamath Restoration Grant Program	\$120,850	\$	\$120,850
Other State Agency	\$	\$	\$
U.S. Fish and Wildlife Service	\$ 40,000	\$	\$ 40,000
Applicant	\$	\$ 10,500	\$ 10,500
Landowner	\$	\$ 17,680	\$ 17,680
Total Project Cost	\$160,850	\$ 28,180	\$ 189,030

Note: Any changes or modifications to a fund source indicated above must be promptly reported to the Grantor's project manager. Projects with undisclosed fund sources may be subject to an audit.

^{*} Travel Expenses and per diem rates set at the rate specified by the Department of Personnel Administration for similar employees. No travel outside the State of California shall be reimbursed unless prior written authorization is obtained from the State.



Proposal Application Form (Pages A9-A14)

For DFG use only		
Proposal No.	Region	

Section 1: Summary Information

1.	Project type:	HB, SC
2.	Project title:	Shasta River Diversion Improvement and Fish Screen Installation
3.	Applicant name:	Montague Water Conservation District
4.	Contact person:	Brandt Crabill Gary Black gblack@sisqtel.net
5.	Address:	PO Box 247
6.	City, State, Zip:	Montague, CA 96064
7.	Telephone #:	(530) 459-3371
8.	Fax #:	(530) 459-0508
9.	Email address:	MWCD@snowcrest.net
10.	Type:	Public Agency ⊠ - Special District Nonprofit Organization Indian Tribe □
11. Sm	OSBCR Certified all Business?	Yes ☐ No ☑ If yes , specify the industry group and Small Business Reference Number:
12.	New grantee:	Yes No No
	Amount requested:	\$131,850
	Total project cost:	\$170,030
15.	Salmonid species benefited:	Chinook⊠ Coho⊠ Steelhead ⊠ Cutthroat □
16	Project objectives:	Chinook Cono Steemead Cuttinoat
		 Survey design and replace two fish passage barriers with Boulder Vortex Weirs on the upper Shasta River Survey design and install a head gate, fish screen and measuring weir on two unscreened diversions located on the Shasta River.
		P-1 P-5 Shasta HM-3c – Barriers to fish passage
18.	Time frame:	Survey sites using GPS surveys equipment from NRCS- Summer 2007 Design boulder vortex weirs to replace flashboard dams – summer/falll 2007 Design fish screens – winter 2008

	Aquire permitting for construction – winter 2008 Install boulder weirs and headgates – fall 2008 Install fish screens and measureing weirs –fall 2008 Monitor project – winter 2009 Submit final report – spring 2010
19. Stream:	Shasta River
20. Tributary to:	Klamath River
21. Major Watershed System:	Shasta River Watershed
22. County(ies):	Siskiyou
23. Coastal Zone:	Yes ☐ No ⊠
24. Trinity River Basin:	Yes ☐ No ⊠
25. Klamath River Basin:	Yes ⊠ No □

Section 2: Location Information

1. Township, Range, Section:	T43N R5W Sec 21 \$22
Latitude, Longitude (in decimal degrees):	Lat 41 37' 34" Long 122 25'
3. Location description:	Shasta River – 4.5 river miles below Lake Shastina
4. Directions:	Montague Water Conservation District: Montague Water Conservation District office is located on 120 S.11th St. in Montague. We request staff meet you there.

Section 3: Watershed Information

1. Watershed name:	Shasta River Watershed		
2. Watershed area:	518,000 acres watershed wide.		
Watershed area directly affected by the proposed project:	Estimated 215,000		
4. Land use statement:	Current land use is mixed grazing land and hay production. Land use is not expected to change over next five years.		
5. Project area ownership:	% Private 100 % State 0 % Federal		
6. Project area with landowners support of proposal:	Estimated 80%		
7. Watershed length of blue line streams:	1,320 miles in Watershed		
8. Length of blue line streams directly affected by proposal:	7 miles below Lake Shastina levee		
9. Limiting Factors to Salmonids:	 X Water quantity (lack of flow, diversions, runoff) X Water quality (temperature, chemistry, turbidity) X Riparian dysfunction (lack of shade, excessive nutrients, roughness, elements) Excessive sediment yield (pool and gravel quality) X Spawning requirements (gravel, resting areas-pools) X Rearing requirements (velocity, lack of shelter, pools) Estuary / lagoon issues (closure during migration periods) X Fish passage (emigration and immigration) 		

	a Coho Recovery Plan River Watershed Plan
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Section 4: Project Objectives

- 1. List task(s) information (i.e. Task Number and task heading) from <u>Coho Salmon Recovery</u> Tasks and <u>Steelhead Trout Management Tasks</u> databases:
- P-1 SONCC E 4 Screen all diversions in the known and potential range of coho salmon.

Short-term: Identify funding and complete ongoing screening program within known and potential range of coho salmon. Assess habitat that will be made accessible to coho salmon after completion of scheduled projects. Coordinate between involved Federal and State Agencies, local and private entities to develop a prioritized list of any remaining unscreened diversions and action plans including designs.

Long-term: Deal with screen maintenance problems. Identify funding and complete ongoing screening program within the known and potential range of coho salmon. Develop protocols for coho salmon trapping and relocation. Establish verification procedures to assure that screens are properly installed and maintained by person(s) benefiting from use of the screened diversion. Support evaluation of, and transition to, less labor intensive designs to minimize future maintenance.

P-5 SONCC E 4 Develop construction and removal procedures or alternate means of diverting water for irrigation dams (gravel or flashboard) that minimize impacts to coho salmon.

Short-term: Identify locations of existing structures, assess impacts to coho salmon, and recommend improvements to procedures and individual structure design. Work with diver

Short-term: Identify locations of existing structures, assess impacts to coho salmon, and recommend improvements to procedures and individual structure design. Work with diverters to implement these improvements. Determine timing of coho salmon emergence. In Shasta, proceed to implementation phase, complete assessments. Eliminate passage problems wherever possible, install or replace ladders where necessary as short term fix. Provide qualified CDFG engineer for design assistance in retrofitting barriers with ladders or correcting problems with locally produced and installed ladders as short term, temporary fix. Develop BMPs for removal/ replacement/ operation, and include these in 1600 process and monitor for effectiveness for both agriculture and fish.

Long-term: Work with other agencies to assure that additional barriers are not created in future. Eliminate or reduce passage problems where ladders were used as short-term solutions or mitigation. Fund experimental designs to test approaches under local field conditions.

Background and need for project: The Shasta River has long been recognized as a highly important tributary in the Klamath Basin for andromous fish. Historical reports of the Shasta River fishery far exceed the runs of today, but the

potential to restore a strong fishery is very much a possibility under current land management, primarily grass pasture and hay production.

In 1991, declines in fish numbers prompted the formation of the Shasta River Coordinated Resources Management and Planning committee (CRMP), The CRMP identified the need to minimize the polarization between agriculture and fishery needs. Working with the local ranchers, the CRMP and the Shasta Valley Resource Conservation District have made substantial progress towards fishery conservation by implementing projects such as exclusion fencing constructed along the riparian zones of the Shasta River, fish screening and investigation into water quality and fishery utilization.

An increased understanding of the watershed and how fish utilize the watershed has allowed for the identification of recovery tasks that are critical to the conservation of anadromous fish populations. Specifically, the value and function of the portion of the Shasta River above Big Springs Creek has become an area of increasing focus. The Hole in the Ground Ranch (takes up a significant portion of the upper Shasta River) focuses on pasture production for a beef cattle operation. The Hole in the Ground Ranch diverts irrigation water off of the Shasta River at two locations. Method to divert water at both locations is the operation of a flash board structure. Both sites divert water through gravity flow (Site #2 has an off-set pump 240' down ditch). Both sites are also unscreened.

The main objectives of this proposal is to provide fish passage and protection at both diversion locations by implementing the following:

- 1.) Re-profile the diversion take-out to accommodate for the installation of boulder vortex weirs as diversion structures.
- 2.) Design and install diversion vortex weirs to maintain channel elevation in relation to the head gate. Rebuild pump station at Site #2 to achieve adequate diversion slope.
- 3.) Design and install fish screens that meet CDFG/NOAA fish screening criteria for an estimated diversion maximum of 4.0 cfs at site #1 and 6.0 cfs at site #2.
- 3. Known limiting factors addressed by project:
- **X** Water quantity (lack of flow, diversions, runoff)
- X Water quality (temperature, chemistry, turbidity) Riparian dysfunction (lack of shade, excessive nutrients, roughness,
- X Excessive sediment yield (pool and gravel quality)
- X Spawning requirements (gravel, resting areas-pools)
- X Rearing requirements (velocity, lack of shelter, pools)
 Estuary / lagoon issues (closure during migration periods)
- X Fish passage (emigration and immigration)
- 4. Limiting factor remediation:

	Water Quality: Reduce ponding of water that can increase water temperature and reduce dissolved oxygen levels. Rearing Requirements: Project eliminates two barriers to fish passage during the irrigation season and allows for juvenile fish migration. Fish screens also protect juvenile fish.
5. Additional objectives:	

Section 5: Project Tasks and Results

1. Detailed project tasks:

The objective of this project is to improve two diversion systems on the Shasta River that are currently unscreened and prevent upstream juvenile fish passage when installed.

This will be a multi-agency cooperative effort including cooperation from DWR, CDFG & NRCS. The cooperation of these entities has been used in similar situations previously and is becoming standard. The objectives of this proposal are identified high priorities within the California Coho Recovery Plan.

The tasks of the proposed project are described below:

In-stream work will occur when flows are low (fall) to protect water quality and fish during construction, turbid flows will be diverted down the diversion ditch to protect water quality. Site #1 is proposed to receive one weir while Site #2 will receive two weirs separated (weirs will be separated by approximately 90'.

- -Weirs will be constructed by: excavating a wide trench (4-6 feet deep and 12-24 feet wide) in segments.
- -Geo-textile fabric will be pinned to the upstream side of the trench and folded upstream.
- -A mix of Large quarry boulders (4-6 feet diameter) and quarry rock (6" 4" diameter) will be placed in the trench to provide a solid base to place the boulder that will become the weir (large quarry boulders will be 4-6' in diameter). The weir will consist of one row of boulders placed across the channel in an upstream pointing arch. Small spacing between boulders will allow bed load movement and fish passage through the weirs.
- -The weir will be arched upstream and the boulders making up the weir will be placed so they interlock and act as a unit rather than individual boulders.
- -The geo-textile fabric will then be folded over the newly completed weir and additional quarry rock will be placed in front of the weir to protect the fabric and will be used to define the elevation

of the weir by "chinking" between the boulders (notches) to achieve desired weir elevation as the final step. Design assistance will be provided by Tom Bensen from the NRCS with additional work conducted by a selected private engineering entity.

-None of the three weirs will lift channel elevation more then .5'. The low flow notch will be placed in the center of the stream at its existing position (thalweg). The high points of the weir will be at the edge of the channel where the weir will key into the bank.

Previous installation of vortex boulder weirs has caused us to change the shape of the weir by placing additional large quarry rock in the bed of the stream located just below the weir (apron) to absorb the energy of the water falling over the weir. The rock apron may extend (on a downstream slope) over 20 feet below the weir to prevent plunging and undermining of the weir. The flood of 2005 showed how important the installation of the apron is in extending the life of the weir, especially in depositional stream reaches. Earlier weirs were constructed without an apron and they suffered significant damage during the flood where the later constructed weirs had adequate aprons and fared the flood better.

The weirs will be installed to act as a grade control to increase confidence in a stable channel elevation. This provides the opportunity to install fixed elevation structures such as head gates, diversion piping and fish screens. The accompanying head gates will be placed just upstream of the upper most weir. The invert of the head-gate will be .4'-.6' below the low flow notch(s) in the weir. The head gate will be a concrete vault fixed with a waterman head-gate provided by the DWR under a CDFG grant. Further description of each site and materials needed are described below:

<u>Description -Site #1:</u> As mentioned previously, Site #1 will have one Vortex Boulder Weir installed just below the diversion location. The elevational change of the flashboard structure is 1.5' when operating.

Length of weir: 36 feet through active channel.
Length of weir key in on west bank: 10'
Length of weir key in on East bank: 20'

Desired channel elevational increase at weir: 4/10' at low flow (apex) Length of bank armoring: West Bank: 10' above weir, 10' feet below

East Bank: 20' above and below weir and around head gate.

Length of culvert to be installed: 40' of 30" inch culvert to be buried off of East bank.

Length of open ditch to be reprofiled: 340' to acquire appropriate grade to accommodate fish screen and measuring weir.

Materials Volumes for site:

Number of individual Large Boulders: 16 Large Boulders

Cubic Yards of Quarry Rock: 180 cu/yds
Trees with root wads 2

Fish Screen: A standard Diagonal Sloping plate Fish screen will be designed and installed at site #1 with a maximum capacity of 4.0 cfs. Site #1 has substantial grade in the ditch which make weir and fish screen design, placement and construction easier.

<u>Description: - Site #2:</u> Site #2 is a more difficult location where the ditch and stream are much flatter and the elevational change over the barrier is higher (4.4'). A fixed point (pump station) prevents re-profiling the ditch to gain some slope. Due to the lack of slope available in the system the following treatment is proposed:

-Install two Vortex boulder weirs separated by 90' that will lift channel elevation a combined .8-1.0". The description of the weir will be as follows:

Length of weirs:

42' across active channel

Length of weir key in on west bank:

20'

Length of weir key in on East bank:

20'

Desired channel elevational increase at weir: 4/10'at first weir 8/10' at second weir

Length of bank armoring: West Bank: 20' above weir, 20' feet below and around head gate

- . D . . OO

East Bank: 20'

Length of culvert to be installed: 220' of 30" inch culvert to be buried off of East bank toward pump station.

Length of ditch/conduit to be reprofiled: 220' to acquire appropriate grade

Materials Volumes for site:

Number of individual Large Boulders:

36 Large Boulders

Cubic Yards of Quarry Rock:

440 cu/yds

Trees with root wads

2

Fish Screen: Either a standard Diagonal Sloping plate Fish screen or a cone screen will be installed with a maximum capacity of 6.0 cfs.

Pump Station: Reconfigure and rebuild pump station so pump system is 3.5' deeper then currently to eliminate flashboard requirement yet have slope to keep pumps inundated and draw flow to the pumps. This will require significant excavation and concrete work.

2. Deliverables:

- Receipt of all needed permits and surveys
- Design and engineering on site #2
- Design and construction plans for fish screens
- Photo documentation of construction of vortex weirs, head gates fish screens and piping
- Final report

3. DFG protocols to be used in project development and implementation : Not Applicable to this
project.
☑ DFG California Salmonid Stream Habitat Restoration Manual
List:
1.) Fish passage specifications will be considered in the constructed channel that will
average 2.5%. Fish passage channel will be designed for Juvenile fish passage.
2.) CDFG/NOAA Fish Screening Criteria
3.) CDFG Vortex boulder weir standards
oxtimes DFG monitoring protocols for restoration project effectiveness and validation monitoring
List:
1.) Passage will be inspected for fish passage velocities and vertical leap in late May
(when fish are assumed to be seeking over-summering habitat) after the first winter.
California Content Standards
☐ National Science Content Standards
4. <u>Other protocols</u> :

DWR head gate installation standards

5. Expected quantitative results (project summary):

Quar	ititative Result	Units	Project Type(s)	Result
a.	Stream length treated or affected by habitat improvement projects	miles	ALL	1.0
b.	Workshop/training events	number	ED, TE	
	Participants in workshop/training events/students educated	number	ED, TE	
d.	Publications completed/distributed	number	ED, TE	
	Schools/institutions reached	number	ED, TE	
f.	Length of stream bank acquired/protected	miles	HA	
g.	Area acquired/protected	acres	НА	
	Barriers/blockages removed or modified (other than culverts)	number	HB, FL	2
i.	Stream length made more accessible by removing barriers other than culverts	miles	HB, FL	5
j.	Stream crossings/culverts improved for fish passage	number	HB, FL	
k.	Stream length made more accessible by treating stream crossings	miles	HB, FL	
I.	Length of instream habitat treated	miles	HI	
m.	Instream habitat and/or bank stabilization structures to be installed	number	HI, HS	1
n.	Length of riparian stream bank treated (measure both sides of the bank, if appropriate)	miles	HR	
0.	Riparian area treated	acres	HR	.7-1.0
p.	Trees planted	number	HR	300
q.	Fencing length to be installed/repaired	miles	HR	
r.	Stream bank stabilized (measure both sides of the bank, if appropriate)	miles	HS	
S.	Road length treated	miles	HU	
t.	Watershed culverts treated	number	HU	
u.	Sediment volume prevented from entering the stream	cubic yards	HU, HR	
٧.	Upslope area treated	acres	HU	
W.	Stream sites monitored	number	MD, MO	
	Public meetings	number	OR, PI	
у.	Public meeting attendees	number	OR, PI	
Z.	Stream length assessed	miles	PL	
	Road length assessed	miles	PL	
	Area assessed	acres	PL	
	Juvenile fish produced	number	RE	
	Juvenile fish released	number	RE	
*****	Fish screens installed	number	SC	2
	Flow rate of diversions treated	cfs	SC	4/6
	Quantity of water protected by screens	acre- feet/year	SC	1520
hh.	Flow of water (average or range) returned to or	cfs	WC, WP	

maintained in stream			
ii. Water flow gauges installed	number	WD	
jj. Amount of water leased/purchased	acre-feet	WP	

6. Other products and results:

Installation of controllable head gates and placement of measuring device on profiled structure.

7. Applicant's qualifications and experience:

Gary Black, will be the project manager on this project on behald of the MWCD. Gary has a degree in Environmental Policy and an "A" or General Engineering License with the State of California. Gary has been developing, designing and overseeing the construction of instream and fishery restoration projects for over 11 years. He has successfully developed, designed, planned, overseen and budgeted over 90 fishery improvement/protection projects, many of which were mulit-disiplined. Gary's experience related to the scope of this project includes: designed, planned and overseen the constrution of 58 fish screens, 32 instream projects (including 20 weirs), 160+ acres of riparian planting, 47 miles of road reshaping, 7 miles of road decommissioning, installed numerous headgates, reprofiled 30+ irrigation ditches and installed over seven miles of burried diversion pipe. Gary has worked with many agencies and interested entities to develop and accomplish the work described above, as well as, obtained all the necessary permitting.

8. Previously completed projects and outcomes under FRGP:

Montague Water Conservation District is a new applicant but Gary Black has installed numerous projects funded by the CDFG, including 15 with similar objectives to this proposal. Gary Black can assist MWCD in learning CDFG contracting process.

Section 6: Landowners, Access and Permits Not Applicable to this project.

1. Landowners Granting	Access for Project: (Please attach provisional consent letter[s])
Agreement attached from v	vater user/landowner that includes intent of Provisional consent.
2. Permits:	1600 permit, Army Corps concurrence, Water Quality certification
3. Lead CEQA agency:	California Department of Fish and Game
4. Required mitigation:	Yes No ⊠

Section 7: Project Budget

1. **Summary project costs** (Please attach detailed budget[s]):

	Anticipated	
Sources of Funds Cash (if secured,	award date	Total
applicable) (secured, pending,		

			unknown)		
Fisheries Restoration Grant Program	131,851				131,180
Other State Agencies Name(s) and amount(s) of each: DWR		2,300	s	2007	2,300
Federal Name(s) and amount(s) of each: USDA-Natural Resource Conservation Service		5,700	S		5,700
Applicant:					
Other Sources Name(s) and amount(s) of each: Landowner Landowner		12,500 17,680	S S		30,180
Total	131,851	38,180			170,030

2. Estimated Project Cost by Task

(Shasta I	River Diversion Improveme	nt and Fish Screening	Program)
Type of Work	Amount Requested	Cost Share	Total
Site #1	36,000	8,000	44,000
Site #2	95,851	30,180	126,031
Total	131,851	38,180	170,030

3. Budget justification:

4. Administrative overhead:

Provide justification if administrative overhead is greater than 10%.

Section 8: Supplemental or Specialized Information

13. Copies of photographs of property

14. Regional Assessor's and site-specific map

(Project Types: HA)

(Project Type: HA)

In the order listed below, please attach the following required items to the application, as appropriate to the proposal project type: 1. Detailed budget (See examples and instructions in Appendix B. (All Project Types) 2. Scaled plan view diagram. See example in Appendix B. (Project Types: CF, FL, FP, HB, HI, HR, HS, HU, PM, SC, WC, WD) 3. Project location 7.5 minute topographic quadrangle map, (USGS). See example in Appendix (All Project Types except: AC, ED, OR, PI, PL, TE) 4. Watershed map. See example in Appendix B. (Project Types: HU, MD, MO, OR, PI, PL, WP) 5. Landowner provisional consent letter. See examples in Appendix B. (All projects where access is necessary for completing any component of the project except AC.) 6. Written eligibility certification from CDF. (Project Type: CF) 7. Evaluation plan. (Project Types: ED, TE) 8. Materials list (Project Type: ED) 9. Status report (existing projects only). (Project Types: OR, PI) 10. 5-year management plan (new projects only). (Project Type: RE) 11. Outline of a Quality Assessment/Quality Control Plan. (Project Types: MD, MO) 12. Land acquisition/easement information documentation. (Project Type: HA)

☐ 15. Narrative appraisal (Project Type: HA)

Supplemental Information Checklist by Project Type (Please refer to the item numbers above)

Project Type	Item Number	Project Type	Item Number
AC	1, 4	MO	1, 3, 4, 5, 11
CF	1, 2, 3, 5, 6	OR	1, 4, 5, 9
ED	1, 5, 7, 8	PI	1, 4, 5, 9
FL	1, 2, 3, 5	PL	1, 4, 5
FP	1, 2, 3, 5	PM	1, 2, 3, 5
HA	1, 3, 5, 12, 13, 14, 15	RE	1, 3, 5, 10
HB	1, 2, 3, 5	SC	1, 2, 3, 5
HI	1, 2, 3, 5	TE	1, 3, 5, 7
HR	1, 2, 3, 5	TW	1, 2, 3, 5
HS	1, 2, 3, 5	WC	1, 2, 3, 5
HU	1, 2, 3, 4, 5	WD	1, 2, 3, 5
MD	1, 3, 4, 5, 11	WP	1, 3, 4, 5

LOI Watershed Protection & Enhancement Projects

The following agreement identifies the responsibilities of the landowner/water user and the Montague Water Conservation District (MWCD) regarding the described proposed project. The following requirements are expected from each of the participating parties:

Montague Water Conservation District:

- -Work with landowner to minimize conflicts between project implementation and land management.
- -Work with landowner to implement project in a fashion that will be most easy to manage and not conflict with current management practices.

-Oversee financial responsibilitiesSelect needed sub-contractors using dev	eloped criteria.	
-Implement the project which includes	designing and installing the following	marked 🗸
applications:		
Riparian Fencing; Construct	feet of fencing along	(Water body).
Rebuild	feet of fencing along	(Water body)
Riparian Planting/Protection: Planting (Water bod	ant acres of riparian trees within t	he riparian area along
	onstruct up to 3 vortex boulder weirs and	
each weir on the Shasta River (Hole in the structures that act as diversion take-outs a bank located just above the weir at each d	e Ground Ranch). Weirs will replace two and block fish passage. A head gate will liversion take-out the control diversion values of the control of the contr	o flashboard diversion be placed on the stream colume. b-contractor who will intractor which will ib-contractor and ensure
each weir on the Shasta River (Hole in the structures that act as diversion take-outs a bank located just above the weir at each description of the work using the developed critical clearly define the project objectives. Act at the project remains on schedule. The project	e Ground Ranch). Weirs will replace two and block fish passage. A head gate will liversion take-out the control diversion values are control; Work with selected subteria. Develop a contract with the sub-control is liaison between property owner and select will take place in the work with the selected sub-contractor (secreening criteria. Oversee work of any tion of screen and maintenance options. Ditch and the	o flashboard diversion be placed on the stream olume. b-contractor who will ob-contractor which will ab-contractor and ensure watershed.) and CDFG to install two sub-contractor(s) and The screens will be

Fish Screen Maintenance Position: Provide positions to achieve consistent screen maintenance by staffing a fish screen maintenance position(s). The position will provide training, ensure safe fish passage and routinely monitor the condition of screen through 2006. Routine cleaning of the screen will remain the responsibility of the user. If no funding is obtained, the responsibility of maintaining the fish screen remains with the diversion user for the life of the screen.

Stock Water System: Design and implement a system which will meet the landowners management needs and protect the riparian area and/or increase flows. Ensure system properly operates. Water user:

Access: The water user/landowner agrees to provide access to the MWCD, sub-contractors of the MWCD during implementation of the project. Water user/Landowner will also allow CDFG to monitor work during construction and ten years after construction. All parties must gain approval and state intent of each visit prior to accessing property. Access will be limited only to the portion of the property involved in the Project. After construction, all parties must notify landowner (in advance) and gain approval of the time and intention of any and all visits with three days advance notice.

Monitoring Access: CDFG Contract Administrator will be allowed periodic access to monitor the proposed work for a period of ten years under the following conditions:

1.) Landowner is contacted at least 72 hours before each visit

2.) Nature of visit is solely intended to determine condition of components of the project

Findings of visit are provided to the landowner following the visit and submitted to landowner in writing.

<u>Fencing</u>: Landowner will maintain riparian fencing for a minimum of ten years. Fencing maintenance includes repair of all damage unless a natural disaster destroys more then 50% of the fence. Landowner will exclude livestock from the riparian area unless an riparian grazing plan has been developed which will not jeopardize the project objectives.

Riparian Planting: Landowner will maintain and care for the riparian plantings as much as feasible. When feasible, irrigation of trees is essential until they are established. Landowner will work with RCD and riparian planting sub-contractor to develop the best planting strategy for riparian development/protection and land management. If grazing plan is implemented, the landowner will abide by the guidelines and monitor grazing trends at least once a day. Livestock must be removed from riparian area as soon as riparian goals are threatened.

In-stream: Landowner will maintain bank stabilization and in-stream structures to extent feasible. It is understood that maintenance of in-stream work is the responsibility of the Landowner after the project is completed. The water user will contact the either the MWCD or RCD if there are plans to alter in-stream work. If in-stream work is causing harm to property, the Landowner will contact the MWCD/RCD and CDFG immediately. All parties will work together to find a mutually beneficial alternative.

Road Erosion Assessment/ Road Erosion Control: Landowner will assist in construction of project if feasible and agreed upon. Landowner will complete agreed upon responsibilities. Land owner will maintain and protect all road improvements as best defined by participating parties and recommendations of the funding source.

<u>Fish Screen</u>: Landowner will ensure the fish screen is cleaned, maintained and operated as shown by the RCD/MWCD and/or CDFG for the life of the fish screen (20 years). Landowner will ensure the screen is removed to a safe location after irrigation season and properly re-installed before the next irrigation. Landowner will use the fish screen whenever the diversion is used. Landowner will lubricate all moving parts, replace needed parts and repair any damage unless the damage is severe. In the case of severe damage, the Landowner will contact the RCD or CDFG.

Fish Screen Maintenance Program: The landowner will participate in the fish screen maintenance program by provided by the requested funding source. Diversion user(s) will continue routine

The signed below agree to uphold the responsibilities defined above:

Vete Scale "5-15-06

MWCD Chairman/Date

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